

**PATENT APPLICATION OF**  
**DAVID DENG**  
**FOR**  
**FIREPLACE**

**BACKGROUND-FIELD OF INVENTION**

The present invention relates generally to an electric fireplace. More specifically, the present invention relates to an electric fireplace with artificial lighting and effects.

**BACKGROUND-DESCRIPTION OF RELATED ART**

A fireplace generally burns wood logs to generate heat. However, a wood burning fireplace requires periodic cleaning and requires constant maintenance. Therefore, many modern fireplace burns natural gas and use artificial logs for aesthetic appeal. This method virtually eliminated the periodic cleaning required for wood burning fireplaces but still uses a flame to generate heat.

More recently, electric heaters are replacing the fireplace as a source of heat. The electric heaters use electricity to generate heat and no fire or flame is generated. The electric heater can also be made portable and can be conveniently used anywhere electricity is available. Furthermore, the electric heater does not require periodic cleaning and does not pose as great a fire hazard as the wood burning or natural gas fireplace.

Electric heaters may be made to appear as a fireplace with artificial logs and lights simulating burning logs and flames. However, the simulated burning logs and the flames in most of these electric heater fireplaces are not very realistic and are aesthetically disappointing to view. Generally one or more red light bulbs are placed under artificial logs to simply light up the artificial logs to simulate burning logs.

## SUMMARY OF THE INVENTION

The present invention is an electric fireplace with artificial logs and lights realistically simulating burning logs and flames. The fireplace comprises of a housing with a top compartment and a bottom compartment. Within the top compartment is affixed an electric heating elements and an exhaust fan to eject the heat from the heating element toward the front of the housing. Artificial logs and lights to simulate burning logs and flames are contained within the bottom compartment wherein the appearance of the lights and its movements are controlled by an electric motor within the bottom compartment. A set of control is attached to the housing for controlling the electric heater and the artificial fireplace. When the fireplace is electrically energized and the controls are activated, the heating element generates heat which are delivered to the user by the exhaust fan. The artificial logs will appear to be burning with realistic moving sparks and dancing flames.

## BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 shows the perspective view of the preferred embodiment of the fireplace.

Figure 2 shows the components of the preferred embodiment of the fireplace.

Figure 3 shows the preferred embodiment of the flame simulator assembly in the housing of the fireplace.

Figure 4 shows the preferred embodiment of the light housing.

Figure 5 shows the preferred embodiment of the artificial logs with the fiber optics simulating sparks from a burning log.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Figure 1 shows the perspective view of the preferred embodiment of the present invention. As shown in figure 2, in the preferred embodiment, the fireplace comprises a decorative housing 1 enclosing the components of the fireplace. The decorative housing 1 is generally divided into two compartments, a top compartment 2 and a bottom compartment 3. The electric heating element 4 and the exhaust fan 5 for ejecting the heat from the electric heating element 4 toward the front of the housing 1 is affixed within the top compartment 2 and electrically connected to an electric power source and are controlled by a control panel 6 affixed to the front of the housing 1. The artificial logs 7 and the lights to simulate burning logs and flames are contained within the bottom compartment 3 wherein the appearance of the lights and its movements are controlled by an electric motor 8 within the bottom compartment 3.

As shown in figure 3, the electric motor 8 directly drives a set of reflectors 9 randomly affixed to an axis member to rotate the reflectors 9 on the axis member. A set of blocking plates 10 randomly attached to another axis member is also driven by the electric motor 8 through belts

11. The electric motor **8** also drives a transparent color wheel **12** with alternating colors in a light housing **13** through a belt **14**.

As shown in figure 4, the light housing **13** encloses the transparent color wheel **12** supported on an axis member driven by the electric motor **8** through a belt **14**. A small light source **15** is also affixed within the light housing **13** with its light directed through the transparent color wheel **12** into one end of a bundle of fiber optics **16**.

As shown in figure 5, the colored lights are carried by the strands of fiber optics **16** to random points on and near the artificial logs **7** to simulate the sparks of a fire burning log. A set of lights **17** are disposed within the artificial logs **7** and the lights **17** will shine through the bottom half of the artificial logs **7**, which is red and transparent. The artificial logs **7** are placed at the base and near the front of the bottom compartment **3** separated from the rear of the bottom compartment **3** by a plastic translucent sheet **18** and a bent steel plate **19** with cut-outs **20** in the general shape of flames with a set of lights **21** disposed near the rear of the bottom compartment **3**.

When the fireplace is electrically energized and the controls are activated, the heating element **4** generates heat which are delivered to the user by the exhaust fan **5**. The artificial logs **7** will appear to be burning with realistic moving sparks and dancing flames.

Another embodiment of the present fireplace uses simulated charcoals instead of artificial logs **7** to realistically simulate glowing charcoals.

Although the description above contains many specificities, these should not be construed as limiting the scope of the invention but as merely providing illustrations of some of the presently preferred embodiments of this invention. Thus the scope of the invention should be determined by the appended claims and their legal equivalents, rather than by the examples given.